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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/146,734	09/03/1998	RALF BOHNKE	450117-4648	9762

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EXAMINER

SAM, PHIRIN

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 01/30/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/146,734

Applicant(s)

BOHNKE, RALF

Examiner

Phirin Sam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 1998.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9, 11-13, 15, 16 and 18 is/are rejected.
- 7) ☒ Claim(s) 4, 8, 10 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings 1, 2, and 5-9 are objected to under 37 CFR 1.83(a) because they fail to show, for example in figure 1 blocks 1-8 do not provide the labels and the ordinary in the art does not understand what these represent for, as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined

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under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Wesel et al. (U.S. Patent 6,125,150).

Wesel et al. teaches or suggests the invention (**claims 1-3 and 5-7**) as claimed including a transmission method for transmitting OFDM-signals, comprising the steps of modulating the signals onto a plurality of subcarriers using a OFDM-modulation (e.g., see Fig. 4a, element modulator, col. 5, line 33) method, transforming the modulated signals into the time domain (IDFT) (e.g., see Figs. 5 and 7, col. 6, lines 18-21), and transmitting the signals characterized in that in the modulating step every M-th subcarrier is modulated with a signal (e.g., see Fig. 4a, col. 5, lines 32-35), wherein M is an integer and $M \geq 2$.

5. Claims 9, 11-13, and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Brink et al. (U.S. Patent 6,038,450).

Regarding claims 9 and 13, Brink et al. teaches or suggests receiving method for receiving OFDM-signals comprising M identical or respectively mirrored wave forms within one OFDM-timeburst, wherein M is an integer and $M \geq 2$, comprising the steps of receiving the OFDM-signals, correlating the wave forms to obtain time synchronization (e.g. see Fig. 3, elements 70 and 83, col. 7, lines 56-67, col. 8, lines 1-10), transforming the signals into the frequency domain, and demodulating the signals. (e.g., see Fig. 3, element 72, col. 7, lines 15-22).

Regarding claims 11-12 and 15-16, Brink et al. teaches or suggests the correlation means (28, 29, 30, 31) a peak detection means (46) is provided for providing

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time synchronization for the transformation of the signals into the frequency domain (e.g., see Fig. 3, element 60, 70, and 72, col. 6, lines 30-3649-54, and col. 7, lines 8-22).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wesel et al. (U.S. Patent 6,125,150) in view of Brink et al. (U.S. Patent 6,038,450).

Regarding claim 18, Wesel et al. teaches or suggests transmission apparatus including modulation means for modulating the signals onto a plurality of subcarriers by OFDM-modulation (e.g., see Fig. 4a, element modulator, col. 5, line 33), transformation means for transforming the modulated signals into the time domain (e.g., see Figs. 5 and 7, col. 6, lines 18-21), and transmission means for transmitting the signals characterized in that in the modulation means every M-th subcarrier is modulated (e.g., see Fig. 4a, col. 5, lines 32-35), wherein M is an integer greater than or equal to 2.

Wesel et al. does not teach or fairly suggest a receiving apparatus for receiving the OFDM-signals having M identical or respectively mirrored waveforms within one OFDM-timeburst, including receiving means for receiving the OFDM-signals, correlation means for correlating the waveforms to obtain time synchronization, transformation means for transforming the signals into the frequency domain, and demodulation means for demodulating the transformed signals. However, Brink et al.

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teaches or suggests the receiving apparatus for receiving the OFDM-signals having M identical or respectively mirrored waveforms within one OFDM-timeburst, including receiving means for receiving the OFDM-signals, correlation means for correlating the waveforms to obtain time synchronization (e.g. see Fig. 3, elements 70 and 83, col. 7, lines 56-67, col. 8, lines 1-10), transformation means for transforming the signals into the frequency domain, and demodulation means for demodulating the transformed signals (e.g., see Fig. 3, element 72, col. 7, lines 15-22). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the receiving apparatus for receiving the OFDM-signals teaching by Brink et al. with the transmission system for transmitting the OFDM-signals teaching by Wesel et al. The motivation for doing so would have been to provide to receive or recover the transmitted signals into the proper form at the destination. Therefore, it would have been obvious to combine Brink et al. and Wesel et al. to render the claim 18 of the invention.

Allowable Subject Matter

8. Claims 4, 8, 10, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Davies et al. (U.S. Patent 5,953,311) discloses timing sync. in a receiver employing OFDM.

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- (2) Tsujishita et al. (U.S. Patent 5,946,292) discloses method and digital receiver for receiving OFDM signals.
- (3) Okada et al. (U.S. Patent 5,787,123) discloses receiver for OFDM signals.
- (4) Hidejima et al. (U.S. Patent 5,675,572) discloses OFDM modulation apparatus and OFDM demodulation apparatus.
- (5) Ikeda et al. (U.S. Patent 5,506,836) discloses OFDM demodulation.

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner, Phirin Sam whose telephone number is (703) 308-9294. The Examiner can normally be reached on Monday – Friday from 8:30 a.m. - 5:00 p.m. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Douglas W. Olms, can be reached on (703) 305-4703. The fax number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

PS
Phirin Sam
Patent Examiner
January 26, 2002

Seema S. Rao
Seema S. Rao
Primary Examiner